

REMARKS/ARGUMENTS

The claims 2-19. Claims 3 and 4 have been amended to better define the invention. Reconsideration is expressly requested.

Claims 3 and 4 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for the reasons set forth on page 2 of the Office Action. In response, Applicant has amended claims 3 and 4 to better define the inventions recited therein which it is respectfully submitted overcomes the Examiner's rejection under 35 U.S.C. 112, second paragraph.

Claims 2, 3 and 5-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Rosenberg et al.* U.S. Patent No. 6,046,297 in view of *Sondhe et al.* U.S. Patent No. 5,340,652. The remaining claims 4 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Rosenberg et al.* and *Sondhe et al.* and further in view of *Motsinger et al.* U.S. Patent No. 3,217,536.

Essentially the Examiner's position was that *Rosenberg et al.* discloses the process recited in the claims, except for bringing the mixture into contact with a synthetic resin that is not cured or not completely cured, that *Sondhe et al.* discloses this feature, and that it would have been obvious to one of ordinary skill in the art to combine the composition of *Rosenberg et al.* with the process of *Sondhe et al.* motivated to do so for such desirable properties as longer pour life, reduced tendency to crack, and reduced presence of toxic free toluene diisocyanate monomers, as evidenced by *Rosenberg et al.* *Motsinger et al.* was cited with respect to claims 4 and 19 as disclosing a reinforced synthetic resin that is part of a wind vane.

The Examiner has also taken the position that the order of mixing of *Rosenberg et al.* is immaterial because no order of the reactants is said to be recited in Applicant's claims and in any event the final product would be the same regardless of the order of mixing unless evidence to the contrary was provided. The Examiner also took the position that arguments on the combination of *Rosenberg et al.* with *Sondhe et al.* had not been presented and that even though *Sondhe et al.* does not use any aromatic

components, the motivation to add a light-resistant aromatic amine arises from the ability of that amine to prevent yellowing which was said to be the same as a concern that *Sondhe et al.* discloses.

This rejection is respectfully traversed.

As discussed in pages 12-14 of Applicant's amendment filed June 24, 2008, none of the references whether alone or in combination discloses or suggests the two-component composition as recited in Applicant's claims. The newly-applied reference to *Motsinger et al.* cited with respect to claims 4 and 19 does not remedy this deficiency as *Motsinger et al.* simply discloses a force vector transducer including an inner shell that may be made from foamed styrene or polyurethane and an outer shell which may be made, *inter alia*, from a thermosetting plastic such as polyester or epoxy resin laminated with fiberglass or other synthetic fibers to give strength. There is no disclosure or suggestion of the two-component composition disclosed in Applicant's claims.

It is respectfully submitted, moreover, that the Examiner's Response to Arguments set forth on page 8 of the Office Action manifests a misunderstanding of Applicant's process as recited in claim 17. The components A1), A2) and A3) of the polyol component recited in Applicant's claim 17 must be contained so as to be in the polyol component in that claim 17 recites a polyol component which "contains" chemical compounds (falling in the groups A1), A2), and A3)), and requires "the mixing of the two-component composition which comprises" the polyol component and the polyisocyanate component so as to form the gel coat material.

In particular, if one were, contrary to the requirements of Applicant's claim 17, mix the polyols A1) and A2) with the polyisocyanate component first (the product of such a reaction is referred to in the art as a prepolymer) and subsequently react this prepolymer with an aromatic amine, one would not obtain a flexible polyurethane gel coat usable with a synthetic resin so as to produce a synthetic resin composite material.

In order to show this fact experimentally, namely to show that the reaction of prepolymer (produced from polyol and

isocyanate) with aromatic amine gives a product which substantially differs from the product of the reaction of a polyol component (containing aromatic amine and polyols) with isocyanate according to Applicant's claim 17, certain experiments have been carried out.

First, the polyol components PA, PB and PC (containing aromatic amine) as set out in the disclosure at page 21 in Tables 6 and 7, are first reacted with the isocyanate mixtures HA, HB and HC as set out in Table 7. After the "pot time," one obtains as reaction product a crosslinked polymer, which is a gel coat as recited in Applicant's claim 17.

In contrast thereto, amine-free polyol mixtures were prepared containing the polyols as set out above for PA, PB and PC, but without the light resistant aromatic amine MCDEA. These amine-free polyol components were termed PA-amine free, PB-amine free, and PC-amine free. PA-amine free, PB-amine free, and PC-amine free were reacted with the same amounts of isocyanate mixture HA, HB, and HC (based on the mass of the isocyanate mixture). In all these cases, this reaction led to solid

products (R-AA-amine free, R-BB-amine free, and R-CC-amine free)
These are solid prepolymers, infusible and insoluble in common
solvents.

A reaction of the prepolymers R-AA-amine free, R-BB-amine
free and R-CC amine free with MCDEA was not possible because the
solid aromatic amine cannot be mixed with these solid
prepolymers.

Therefore, it is respectfully submitted that contrary to the
Examiner's understanding, the reaction of prepolymer (prepared
from polyol and isocyanate) with an aromatic amine gives a
(comparative) product which differs from the product achieved
with Applicant's process as recited in claim 17, where the
product is prepared by reacting a polyol component (containing
polyols and aromatic amine) with isocyanate. It is respectfully
submitted that it is self-explanatory that the comparative
(attempted) reaction of prepolymer with amine did not result in
anything that could be called, or used as, a "flexible
polyurethane gel coat".

Thus, it is respectfully submitted that the Examiner's position is unfounded if for no other reason than that the primary reference to *Rosenberg et al.* fails to disclose or suggest the claimed components recited in Applicant's claim 17.

Moreover, Applicant's invention as recited in claim 17 relates to the production of synthetic resin composite materials. The requirements of gel coats for such composite materials are very specific and are set out at pages 1-5 of Applicant's disclosure. For example, there must be adequate adhesion between synthetic resin and gel coat, which in turn requires that the curing of the mixture so as to form a gel coat material must proceed in a very specific manner. In particular, after the initial curing of the gel coat mixture, the subsequent lamination time during which the mixture must be sufficiently tacky needs to be long enough so as to allow the processing and preparation of a composite with good adhesion of the synthetic resin. Such specific properties do not need to be shown by castable polyurethanes.

Rosenberg et al. relates to castable polyurethane compositions which may be used for industrial rolls such as papermill rolls, industrial wheels and industrial tires. See *Rosenberg et al.* at column 1, line 11 and column 3, lines 32-34. It is respectfully submitted that a person skilled in the art understands that -- apart from the failure of *Rosenberg et al.* to teach the components as recited in Applicant's claim 17 -- *Rosenberg et al.* also relates to a different field of technology. Hence, it is respectfully submitted that the Examiner's position that *Rosenberg et al.* relates to the same field of endeavor as Applicant's process as recited in claim 17 and is therefore analogous art with respect to *Sondhe et al.*, which in contrast to *Rosenberg et al.* indeed relates to a laminate, is unfounded.

The defects and deficiencies of the primary reference to *Rosenberg et al.* are nowhere remedied by the secondary reference to *Sondhe et al.* The Examiner's comments with respect to *Sondhe et al.* set forth in the Response to Arguments section of the Office Action are not understood. *Sondhe et al.* simply suggests using aliphatic amines to prevent yellowing, whereas Applicant's process as recited in claim 17 requires the presence of a light-

resistant aromatic amine in the polyol component. Therefore, it might well be the case that *Sondhe et al.* relates to a problem which can be considered somewhat similar to the gel coats to which Applicant's process is directed, insofar as both Applicant's gel coat and the coating of *Sondhe et al.* should not yellow. Nevertheless, *Sondhe et al.* fails to disclose or suggest light-resistant aromatic amines. Rather, *Sondhe et al.* teaches the use of aliphatic amines, and for this simple reason cannot render Applicant's process as recited claim 17 obvious whether considered alone or in combination with *Rosenberg et al.* *Sondhe et al.* teaches a solution (aliphatic amine) to a problem which differs from the solution in Applicant's claims which concern a light-resistant aromatic amine.

The remaining reference to *Motsinger et al.* simply relates to a force vector transducer having a fixed outer shell 10 (see column 3, line 72 to column 4, line 14 of *Motsinger et al.*). As stated in *Motsinger et al.* at column 4, line 72 to column 4, line 10, outer shell 10 is

"preferably somewhat more rigid than foam plastic and...may be constructed of...polyester or epoxy resin laminated with Fiberglas or other suitable synthetic fibers to give the desired strength.... [T]he surface that is exposed to the weather may be coated with fluorocarbon resins (Teflon), polyethylene, or any other suitable coating material which will render the surface substantially impervious to weathering and repellent to the accumulation of dirt, water droplets, snow, and sleet."

It should be noted that *Motsinger et al.* discloses a lightweight material having a desired strength, to be coated with a rather soft (Teflon or polyethylene) coating. The force vector transducer of *Motsinger et al.* and in particular the fixed outer shell 10 thereof may be exposed to the impact of wind, which may contain sand or raindrops. Only during a storm do high wind velocities act upon the force vector transducer of *Motsinger et al.*, and therefore, the long term stress by wind, rain and particle erosion is relatively small.

In contrast, the wind vane of a wind power plant is not only exposed to the wind impacting the wind vane, but also even at slow wind velocities moves perpendicularly to the direction of the wind (i.e. is not fixed), with circumferential velocities of

up to 200 miles per hour. Sand particles or rain drops traveling together with the wind therefore very often impact the surface of the wind vane at very high relative velocities. The resultant mechanical and abrasive long term stress on a moving wind vane is therefore substantially higher than that observed with the fixed outer shell of a force vector transducer. It is respectfully submitted that a person skilled in the art would therefore not see any relationship between the requirements that a force vector transducer has to meet and the requirements that a wind vane for a wind power plant has to meet, which becomes apparent if one considers the materials suggested by *Motsinger et al.*, such as Teflon and polyethylene. Such soft materials, having very little scratch resistance etc., may be sufficient for a force vector transducer, but would be considered by a person skilled in the art to be entirely inappropriate and insufficient for the rotor vane of a wind power plant.

Claim 4 is dependent on claim 17 and further specifies that the synthetic resin used includes one or several reinforcing materials wherein glass fiber, fabric and/or glass fiber, nonwoven and plastic fiber fabric or carbon fiber bonded fabric

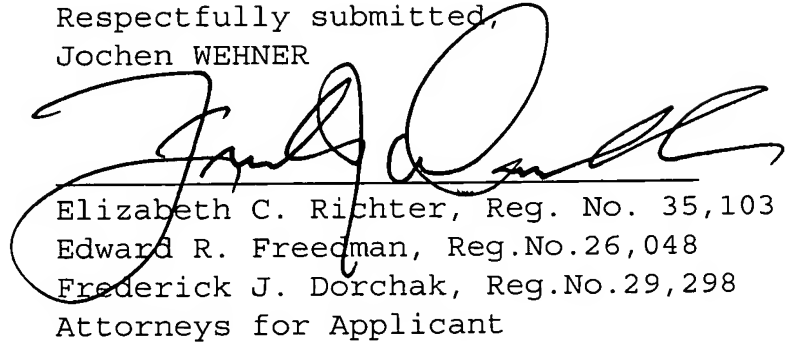
are used as reinforcing material, which further emphasizes the laminate (composite) structure achieved with Applicant's process and therefore further distinguishes over the primary reference to *Rosenberg et al.*

Accordingly, it is respectfully submitted that the claims are patentable over the cited references whether considered alone or in combination.

In summary, claims 3 and 4 have been amended. In view of the foregoing, it is respectfully requested that the claims be allowed and that this case be passed to issue.

Applicant also submits herewith a Sixth Supplemental
Information Disclosure Statement.

Respectfully submitted,
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